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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Art Unit: 1792

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/770,737

Filing Date: February 03, 2004

Appellant(s): CHEN ET AL.

Attorney Keith Tackett
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/2/2009 and 7/20/2009
appealing from the Office action mailed 1/8/2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in
the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial
proceedings known to the examiner which may be related to, directly affect or be
directly affected by or have a bearing on the Board's decision in the pending
appeal:

Appellant has previously appealed the final rejection of claims 26-28 now
pending in the present application.

(3) Status of Claims

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The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The copy of the appealed claims contained in the Appendix to the brief is correct.

| | | |
|-----------|-------------|--------|
| 6,921,466 | HONGO ET AL | 7-2005 |
| 6,716,330 | HONGO ET AL | 4-2004 |
| 6,267,853 | DORDI ET AL | 7-2001 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over HONGO ET AL 6,921,466 IN VIEW OF HONGO ET AL 6,716,330.

Hongo et al '466 teaches multiple embodiments of the design of a substrate processing system. Hongo et al teaches in multiple embodiments of a substrate processing system which is comprised of the following elements: a factory interface having a substrate transfer robot or first robot positioned therein, the factory interface being configured to communicate with at least one substrate containing cassette; and at least two of the substrate processing modules/units are interchangeable within the system such that the substrate processing modules are in detachable communication with and removable from the factory interface (see column 5 lines 60-65 and column 34 lines 7-11). Hugo et al '466 shows in Figure 49 a substrate processing system wherein the plating unit/module 512 includes two separate cells/rooms like those in Figure 47 and Figure 14. Hongo et al '466 fails to teach module 512 includes an electroless plating cell and a pretreatment/post treatment cell. However, it would have been obvious the Hongo et al '466 plating cell assembly of the substrate treatment module as taught in Figure 49 is capable of applying an electroless plating solution or a cleaning solution onto the substrate since the nozzles in the plating unit depicted in Figure 14 are capable of applying a variety of treatment liquids including an electroless plating solution or a cleaning solution dependent on the coating material supplied thereto. Further, it would have been obvious to arrange the pretreatment/post treatment cell within the plating treatment module 512 of Hongo et al '466 since Hongo et al '466 teaches plating and cleaning may occur in different cells or rooms if plating is occurs in a cup-type cell such as the cup-type cell as depicted in Figure 14 and Figure 49 of Hongo et al '466 especially

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given teaching of Hongo et al '330 shows that electroless plating and pre-treatment/post treatment of the substrate occurs in separate and immediately adjacent cells or rooms (see Hongo et al '466 column 54 lines 23-27 and Hongo et al '466 cup 2-11 within the plating cell depicted in Figure 14). Finally, it would have been obvious given the modifications of the Hongo et al '466 system as discussed above to provide an additional substrate processing module which includes a plating cell and a pretreatment/post treatment cell for the obvious advantage of increasing the throughput of the substrate processing system for plating and especially in view of Figure 47 of Hongo et al '466 which shows a substrate processing system providing at least two modules each of which includes a plating cell. Thus claim 26 is obvious over the above cited references. With respect to claim 27 and claim 28, the same rejection applied to claim 26 is applied here. Further, the recitation that the pre-treatment/post treatment cells or the electroless plating cells are interchangeable within the processing system does not structurally define applicant's invention over the above cited references since there are at least two of the substrate processing modules in the modified Hongo et al '466 system and each of the substrate processing modules includes a pre-treatment/post treatment cell and electroless plating cell are interchangeable with another module which includes a pre-treatment/post treatment cell and electroless plating cell thereby reading on the pre-treatment/post treatment cells and electroless plating cells being interchangeable.

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hongo et al 6,921,466 in view Dordi et al 6,267,853.

Hongo et al '466 teaches the design of an substrate/wafer processing system as shown in Figure 31 which is comprised of the following elements: a factory interface having a substrate transfer robot or first robot positioned therein, the factory interface being configured to communicate with at least one substrate containing cassette; and at least two of the substrate processing modules are interchangeable within the system such that the substrate processing modules are in detachable/removable communication with the factory interface (see paragraphs 0038-0039, 321 and 0336 as wells as paragraph 00312 which includes teaching of Hongo et al '466 providing processing units within the system with same size, for example same frontage dimension, such that processing units are interchangeable with other units in the system for example plating, cleaning, annealing and the like to facilitate interchangeably of the units). Hongo et al '466 fails to teach substrate processing system includes at least two substrate processing modules each of which include an electroless plating cell and pretreatment/post treatment cell.

However, given the Hongo et al '466 teaching of interchangeability of units within the system as depicted in Figure 31, it would have been obvious to modify Hongo et al '466 wafer processing system by providing at least two substrate processing modules of the total number of modules each with an electroless plating cell and cleaning cell or pretreatment cell since Dordi et al teaches in a wafer processing system using two substrate processing modules each of which

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include a plating cell and pretreatment/post treatment cell for the taught advantage of increasing the throughput rates of the system (see Dordi et al at column 12 lines 27-29 teaching of arranging two electroless plating cells adjacent one other to increase throughput of the system and is shown in Figure 3 which indicates that pre-treatment cell may be arranged adjacent plating cells 240). Further, it would have been obvious given the modified Hongo et al '466 system to arrange the at least two substrate processing modules each of which includes a electroless cell and pre-treatment/post-treatment cell such that they are interchangeable and detachable with respect to the factory interface since Hongo et al '466 at column 34 lines 7-11 teaches providing the units/modules with the same frontage dimension to facilitate detachment and interchange with another unit/module. Thus claim 26 is obvious over the above combination of references. With respect to claim 27 and claim 28, the same rejection applied to claim 26 is applied here. Further, the recitation that the pre-treatment/post treatment cells or the electroless plating cells are interchangeable within the processing system does not structurally define applicant's invention over the above cited references since there are at least two of the substrate processing modules in the modified Hongo et al '466 system and each of the substrate processing modules includes a pre-treatment/post treatment cell and electroless plating cell are interchangeable with another module which includes a pre-treatment/post treatment cell and electroless plating cell thereby reading on the pre-treatment/post treatment cells and electroless plating cells being interchangeable.

(10) Response to Argument

Appellant's argument that Hongo et al '466 fails to teach a detachable unit includes two cells, that is, a pretreatment/post treatment cell and an electroless processing cell is found to be non-persuasive. The teaching at column 34 lines 7-11 of Hongo et al '466 providing processing units within the system with same size, for example same frontage dimension, such that processing units are interchangeable with other units in the system for example units for plating, cleaning, annealing and the like to facilitate interchangeably of the units in the Hongo et al '466 system. Hongo et al shows in Figure 31 that a module which includes a variety of interchangeable chemical processing cells or units arranged on either side of the factory interface and a number of these cells or units within each of the modules are capable of pretreatment/post treatment of the substrate such as cleaning the substrate and a number of cells or units within each of the modules are capable of electroless plating of the substrate. Therefore, it would have been obvious the Hongo et al '466 plating cell assembly of the substrate treatment module is capable of applying an electroless plating solution or a cleaning solution onto the substrate since the nozzles in the plating unit depicted in Figure 14 are capable of applying a variety of treatment liquids including an electroless plating solution or a cleaning solution dependent on the coating material supplied thereto. Further, it would have been obvious to arrange the pretreatment/post treatment cell within the plating treatment module 512 of Hongo et al '466 since Hongo et al '466 teaches plating and cleaning may occur in different cells or rooms if plating is occurs in a cup-type cell such as the cup-

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type cell as depicted in Figure 14 and Figure 49 of Hongo et al '466 especially given teaching of Hongo et al '330 shows that electroless plating and pre-treatment/post treatment of the substrate occurs in separate and immediately adjacent cells or rooms (see Hongo et al '466 column 54 lines 23-27 and Hongo et al '466 cup 2-11 within the plating cell depicted in Figure 14). Finally, it would have been obvious given the modifications of the Hongo et al '466 system as discussed above to provide an additional substrate processing module which includes a plating cell and a pretreatment/post treatment cell for the obvious advantage of increasing the throughput of the substrate processing system for plating and especially in view of Figure 47 of Hongo et al '466 which shows a substrate processing system providing at least two modules each of which includes a plating cell.

Applicant's argument that Hongo '466 fails to teach with respect to Figure 11 that electroless plating unit 111 is detachable with respect to the factory interface is found to be non-persuasive. Hongo et al '466 at column 34 lines 7-11 teaches providing processing units within the system with same size, for example same frontage dimension, such that processing units are interchangeable and inherently detachable from the factory interface to enable one interchange with one units for another as suggested by Hongo et al '466.

(11) Related Proceeding(s) Appendix

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided within the file.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Brenda A Lamb/

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